

Claims

We claim:

- 1 1.-A tandem drive system for a tracked vehicle having a main track
2 longitudinally extending in a closed endless main loop on opposite
3 sides and engaging a separate main drive sprocket assembly, extending
4 under roadwheels to a main drive idler wheel, and back to said main
5 drive-sprocket assembly in said main loop, said tandem drive system
6 comprising:
 - 7 a secondary track engaging each main drive-sprocket assembly and
8 extending forward along the track vehicle from each main drive-
9 sprocket assembly under only an aft-most fractional portion of the
10 roadwheels, said secondary track being configured as a closed endless
11 secondary loop inside of said main loop of each main track.
- 1 2.-The system of claim 1 wherein each secondary track is shorter than
2 each main track.
- 1 3.-The system of claim 2 wherein each main track is made of steel and
2 has inwardly extending longitudinally spaced-apart guide horns, and
3 each secondary track has a fiber reinforced flexible belt-like
4 structure having longitudinally spaced-apart openings correspondingly
5 spaced with respect to said guide horns.
- 1 4.-The system of claim 3 comprising:
 - 2 a tensioning apparatus mounted on each opposite lateral side of
3 the tracked vehicle in contact with a separate secondary track to

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4 selectably exert a pushing, tensioning force on each secondary track;
5 and

6 a hub provided with annular outside surfaces on each main drive-
7 sprocket assembly, said tensioning force exerted by said tensioning
8 apparatus tightening each secondary track around each drive sprocket
9 assembly.

1 5.-The system of claim 4 wherein tightening of each secondary track
2 around each drive sprocket assembly frictionally engages said annular
3 outside surfaces of each hub of each main drive-sprocket assembly to
4 transfer rotary power to move said secondary track and said tracked
5 vehicle.

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1 6.-The system of claim 3 comprising:

2 secondary sprockets having annular gear teeth extending from a
3 hub on each rear-mounted main drive-sprocket assembly; and

4 longitudinally spaced-apart holes in each secondary track, said
5 spaced apart holes in each secondary track being correspondingly
6 spaced apart with respect to said gear teeth.

1 7.-The system of claim 6 wherein said gear teeth engage said spaced
2 apart holes in each secondary track to transfer rotary power to move
3 said secondary track and said tracked vehicle.

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1 8.-A tracked vehicle comprising:

2 a main return idler wheel on opposite sides and at the front of a

1 tracked vehicle;

2 a main drive sprocket assembly on each of said opposite sides
3 mounted at the rear of said tracked vehicle;

4 roadwheels on each of said opposite sides, said roadwheels being
5 spaced apart from one another and located along the bottom of said
6 tracked vehicle;

7 a main track longitudinally extending in a closed endless main
8 loop on each of said opposite sides, each main track engaging a
9 separate main drive sprocket assembly, extending to a separate main
10 drive idler wheel, under said roadwheels, and back to said separate
11 rear-mounted main drive-sprocket assembly in said main loop;

12 a tandem drive system inside said main loop of each main track,
13 said tandem drive system engaging each rear-mounted main drive-
14 sprocket assembly and defining a closed endless secondary loop inside
15 of and shorter than said main loop.

1 9.-The vehicle of claim 8 wherein said tandem drive system comprises:

2 a secondary track engaging each rear-mounted main drive sprocket
3 assembly and extending forward under only an aft-most fractional
4 portion of said roadwheels, said secondary track extending in said
5 secondary loop.

1 10.-The vehicle of claim 9 wherein each main track is made of steel
2 and has inwardly extending longitudinally spaced-apart guide horns,
3 and each secondary track has a fiber reinforced flexible belt-like
4 structure having longitudinally spaced-apart openings correspondingly

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5 spaced with respect to said guide horns.

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1 11.-The vehicle of claim 10 comprising:

2 a tensioning apparatus mounted on each opposite lateral side of
3 said tracked vehicle and in contact with a separate secondary track to
4 selectably exert a pushing, tensioning force on each secondary track;

5 a hub provided with annular outside surfaces on each main drive-
6 sprocket assembly, said tensioning force exerted by said tensioning
7 apparatus tightening each secondary track around each drive sprocket
8 assembly.

1 12.-The vehicle of claim 11 wherein tightening of each secondary track
2 around each drive sprocket assembly frictionally engages said annular
3 outside surfaces of each hub of each main drive-sprocket assembly to
4 transfer rotary power to move said secondary track and said tracked
5 vehicle.

1 13.-The vehicle of claim 10 comprising:

2 secondary sprockets having annular gear teeth extending from a
3 hub on each rear-mounted main drive-sprocket assembly and;

4 longitudinally spaced-apart holes in each secondary track, said
5 spaced apart holes in each secondary track being correspondingly
6 spaced apart with respect to said gear teeth.

1 14.-The vehicle of claim 13 wherein said gear teeth engage said spaced
2 apart holes in each secondary track to transfer rotary power to move

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3 said secondary track and said tracked vehicle.

1 15.-A method of creating a tandem drive system for a tracked vehicle
2 having a main track longitudinally extending in a closed endless main
3 loop on opposite sides and engaging a separate main drive sprocket
4 assembly, extending under roadwheels to a main drive idler wheel, and
5 returning back to said main drive-sprocket assembly in said main loop,
6 said method comprising the steps of:

7 engaging a secondary track by each main drive-sprocket assembly;
8 and

9 extending said secondary track forward along the track vehicle
10 from each main drive-sprocket assembly under only an aft-most
11 fractional portion of the roadwheels;

12 configuring said secondary track as a closed endless secondary
13 loop inside of and shorter than said main closed endless loop of each
14 main track.

1 16.-The method of claim 15 further comprising the steps of:

2 providing inwardly extending longitudinally spaced-apart guide
3 horns on each main track; and

4 forming each secondary track from fiber reinforced flexible belt-
5 like structure having longitudinally spaced-apart openings
6 correspondingly spaced with respect to said guide horns.

1 17.-The method of claim 16 further comprising the steps of:

2 mounting a tensioning apparatus on each opposite lateral side of

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3 the tracked vehicle in contact with a separate secondary track to
4 selectably exert a pushing, tensioning force on each secondary track;
5 and

6 tightening each secondary track on a hub provided with annular
7 outside surfaces on each main drive-sprocket assembly by said
8 tensioning force exerted by said tensioning apparatus.

1 18.-The method of claim 17 further comprising the step of:

2 frictionally engaging said annular outside surfaces of each hub
3 of each main drive-sprocket assembly by the step of tightening each
4 secondary track around each drive sprocket assembly to transfer rotary
5 power to move said secondary track and said tracked vehicle.

1 19.-The method of claim 16 further comprising the steps of:

2 providing secondary sprockets having annular gear teeth extending
3 from a hub on each rear-mounted main drive-sprocket assembly and;
4 providing longitudinally spaced-apart holes in each secondary
5 track, said spaced apart holes in each secondary track being
6 correspondingly spaced apart with respect to said gear teeth.

1 20.-The method of claim 19 further comprising the steps of:

2 engaging said spaced apart holes in each secondary track by said
3 gear teeth engage; and

4 transferring rotary power via the engaged spaced apart holes and
5 gear teeth to move said secondary track and said tracked vehicle.

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